

CLAIMS

1. A waterproofed breathable sole (10) for shoes, characterized in that it comprises a tread (11) made of leather or similar breathable and water-permeable material, which is covered at least partially in an upward region
5 by a membrane (12) made of a material that is breathable and waterproof and is joined perimetrically to the tread (11) by way of a screen-printed sealing ring (14).
2. The sole according to claim 1, characterized in that said waterproof and vapor-permeable membrane (12) is made of expanded
10 polytetrafluoroethylene.
3. The sole according to claim 1, characterized in that said waterproof and vapor-permeable membrane (12) supportless, and is provided with thicknesses between 5 and 40 microns.
4. The sole according to claim 1, characterized in that said membrane
15 (12) is spaced perimetrically from the edge of said tread (11).
5. The sole according to claim 1, characterized in that said membrane (12) is fixed to said tread (11) by way of adhesive (13) applied in spots.
6. A method for manufacturing a sole according to one or more of the preceding claims, consisting in:
- 20 -- preparing a frame (15) that comprises, at least at perimetric regions of the membrane (12) in selected position on the tread (11), a fabric with a mesh that is sufficiently wide to allow the passage of a solution or dispersion of polymer that has a dry residue of at least 60% by weight with the addition of setting agents;
- 25 -- arranging said membrane (12) on said tread (11);
- placing said tread (11) and said membrane (12) under said frame (15), pouring said solution or dispersion of polymer onto said frame (15), and making it penetrate through the mesh of said frame (15), forming at least one layer of a sealing ring (14);
- 30 -- removing the assembly constituted by the tread (11), the membrane

(12) and the ring (14); and

-- drying the assembly.

7. The method according to claim 6, characterized in that said solution or dispersion of polymer that has a dry residue of approximately 60% by weight is a polyurethane solution or dispersion.

8. The method according to claims 6 and 7, characterized in that it comprises addition to said solution or dispersion of polyurethane polymer that has a dry residue of approximately 60% by weight of cross-linking agents.

9. The method according to claim 8, characterized in that said cross-linking agents are catalyzed isocyanates.

10. The method according to one or more of claims 6 to 9, characterized in that it comprises a heating step, after the forming of said ring (14), in order to accelerate the cross-linking of said solution or dispersion of polymer.

11. The method according to claim 10, characterized in that said heating is performed substantially at 60-80 °C.

12. The method according to claim 6, comprising a preliminary application, to said tread (11), of adhesion promoters constituted by dispersions or solutions of polyurethane polymers having a low viscosity, such as to be capable of penetrating through the fibers of said leather.

13. The method according to claim 6, consisting of the preliminary application, to said tread (11), of polyurethanes having a low relative molecular mass in a solution or dispersion.

14. The method according to claim 13, characterized in that it comprises addition to said polyurethanes having a low relative molecular mass in solution or dispersion of cross-linking agents.

15. The method according to claim 14, characterized in that said cross-linking agents are catalyzed isocyanates.

16. The method according to claim 6, comprising, prior to the arrangement of said membrane (12) on said frame (15), covering by a

photoengraving technique the regions of said frame (15) that are to be left uncovered by said solution or dispersion of polymer.

17. The method according to claim 16, characterized in that said regions covered by photoengraving are the regions subsequently covered by said
5 membrane (12), except for the regions that correspond to its edges.

18. The method according to claim 6, characterized in that the step of arrangement of said membrane (12) on said tread (11) also comprises the gluing of said membrane (12), treated beforehand with spots (13) of glue, to said tread (11).

10 19. The method according to claim 18, characterized in that said gluing is performed by way of hot pressing.

20. The method according to claim 6, characterized in that it comprises facilitation of the penetration of said solution or dispersion of polymer through the mesh of said frame (15) through action of a doctor.